

REMARKS

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salam (U.S. Patent No. 6,081,073) in view of Narveson et al (U.S. Patent No. 4,386,345). Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Salam in view of Narveson et al, as applied to claim 1 and further in view of Holloman (U.S. Patent No. 6,097,360).

As to claims 1-18, the Examiner states that Salam discloses a dynamic controller for light emitting active matrix display, the display being responsive a code value (e.g., 256 value) for producing a light output, a code value corrector including a memory, and further teaches a photosensor located on the display for sensing the light output from the display and generating a feedback signal (i.e. analog signal outputted from camera 21 or photosensor) representing thereof. The Examiner acknowledges, however, that Salam does not teach an update calculator for creating an updated corrected code value by combining the converted feedback signal with the corrected code value and storing the updated corrected code value in the memory. The Examiner then states that Narveson teaches a well-known system to combine a converted feedback signal (i.e. log A which is converted by look-up table from light sensing signal; see column 7, lines 64-68) with a corrected code value (i.e. brightness value stored in the PROM 27 or RAM 16; see column 5, lines 24-47 and column 6, line 39 through column 7, line 5) and storing updated corrected code value in the memory (see Figures 1 and 2A-2B, see column 10, lines 47-68 and column 11, line 9 through column 12, line 9), and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the updated calculator of Narveson to the microprocessor of Salam because the updated calculator of Narveson used are not only to simplify calculation but more importantly to correspond to the normal logarithmic reception characteristics of the human eye (see last four line of the abstract in Narveson). This rejection is respectfully traversed.

As previously explained, the invention is directed to a dynamic controller for a light emitting active-matrix display, the display being responsive to code values for producing a light output, that includes a photosensor located on the display for sensing the light output from the display and generating a feedback signal representative thereof; a feedback signal converter for converting the feedback signal to a converted feedback signal having the same form as the code

value; a code-value corrector including a memory responsive to a code value for producing a corrected code value; and an update calculator for creating an updated corrected code value by combining the converted feedback signal with the corrected code value, and storing the updated corrected code value in the memory. The present invention thus relies upon a feedback loop employing a converted feedback signal generated by a sensor on the display device to update a corrected code value used to adjust the display output. The controller of the present invention is referred to as a dynamic controller because the adjustments applied by the controller change over time as the feedback signal changes over time in response to changes in the characteristics of the display device. Because the present invention relies upon actual feedback and updated correction code values rather than a model of the active-matrix device behavior, it can be applied with few or no changes to a wide variety of devices. For example, if the light-emitting materials change or device-to-device variability is significant, no change to the design is necessary and the present invention will properly correct for any changes or variability.


As acknowledged by the Examiner, Salam does not teach an update calculator for creating an updated corrected code value by combining a converted feedback signal with a corrected code value and storing the updated corrected code value in the memory. Narveson et al also fails to teach or suggest such feature. Rather, Narveson et al describes a CRT system with an ambient light detector, and a controller designed to compensate for brightness control over a wide range of ambient light conditions. While Narveson et al does teach various embodiments of controlling color and brightness of the CRT in response to ambient changes, and dynamic control of the CRT in response to ongoing changes in ambient lumination, there is no feedback loop based on actual display light emissions which compensates for changes in the CRT display performance over time. Rather, only ambient light conditions and user input (e.g., desired brightness) are monitored, and the display driven in response to changes in such monitored features based on pre-set calibrations. Simply put, there is no feedback loop wherein corrected code values associated with a desired display output are updated based on a converted feedback signal having the same form as the code values obtained from an actual measurement of the light output from the display. This is necessarily so as Narveson et al fails to provide any measurement of the

actual light output of the display. A close examination of Figs 2a, 2b, and 4 (and associated text) of Narveson et al confirms that there simply is no feedback loop as described and required in the present invention. The proposed combination of Narveson et al and Salam accordingly can not result in the present claimed invention. Reconsideration of this rejection is accordingly strongly urged.

As to claim 19, the Examiner further notes that Salam and Narveson et al do not mention the controller and the display device integrated on a common substrate, and states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a common substrate for such types of elements as taught by Holloman so that the display device is more compact. Holloman, however, further fails to overcome the basic deficiencies of the combination of Salam and Narveson et al with respect to the claimed invention. Reconsideration of this rejection is also therefore respectfully requested for the reasons set forth above.

In view of the foregoing remarks, reconsideration of this patent application is respectfully requested. A prompt and favorable action by the Examiner is earnestly solicited. Should the Examiner believe any remaining issues may be resolved via a telephone interview, the Examiner is encouraged to contact Applicants' representative at the number below to discuss such issues.

Respectfully submitted,



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